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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,565	10/24/2001	Donald Henry Willis	PU000183	5066

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EXAMINER

YENKE, BRIAN P

ART UNIT

PAPER NUMBER

2614

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/003,565

Applicant(s)

WILLIS, DONALD HENRY

Examiner

BRIAN P. YENKE

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claims 1-9 and 11-21, the phrase "further processing" renders the claim(s) indefinite because the claim(s) include(s) a limitation without any scope (meets/bounds of the limitation), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11-15, 17-23 and 27 rejected under 35 U.S.C. 102(e) as being anticipated by Mendenhall et al., US 6,483,951.

In considering claims 11-15, 17-23 and 27,

*The claimed a chroma vertical interpolator configured to receive an interlaced video signal representing a luma component...is met by DVD Audio/Video Decoder 120 (Fig*

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3) which can be implemented receiving any MPEG-2 stream, including NTSC/PAL or CIF image, where the decoder includes a vertical filter 234 (Fig 5), where the decoder can convert the received signal of 4:2:0 into a 4:2:2 signal, which produces a chroma component (R-Y which is non-interpolated from the original 4:2:0) and produces a chroma interpolated image for the B-Y component from the original 4:2:0. Mendenhall discloses that based upon the display mode of operation (col 9, line 50 to col 11, line 36), can display either a interlaced or progressive picture.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 16, 24-26 and 28-29 rejected under 35 U.S.C. 103(a) as being unpatentable over Mendenhall et al., US 6,483,951.

In considering claims 1-4, 7-10 and 24,

*a) the claimed receiving an interlaced signal...* is met by host interface 124 which can receive an MPEG-2 video signal of a YUV 4:2:0 color format.

*b) the claimed decoding said interlaced signal* is met by DVD Audio/Video Decoder 120 (Fig 3) which can be implemented receiving any MPEG-2 stream, including NTSC/PAL

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or CIF image, where the decoder includes a vertical filter 234 (Fig 5) where the decoder can convert the received signal of 4:2:0 into a 4:2:2 signal.

*c) the claimed deinterlacing said interlaced video signal* Mendenhall discloses that based upon the display mode of operation (col 9, line 50 to col 11, line 36), can display either a interlaced or progressive picture.

*e) the claimed further processing* is met by the video player 100 providing the converted/received signal to display device 90 (Fig 2).

Mendenhall does not explicitly disclose decreasing the number of chroma lines back to the signal before it was increased.

Mendenhall does disclose converting the received 4:2:0 signal into a 4:2:2 signal, however Mendenhall does not reconvert the 4:2:2 signal into a 4:2:0 signal.

As applicant's claim states, the decreasing (reconverting) substantially reverses the increasing (1<sup>st</sup> conversion).

Thus the question of obviousness/patentability, is whether the conversion of a signal from one format to another and back to the original format is patentably distinct. The examiner's position is that the reconverting of a signal to the original form produces no unexpected results, since the conversion produces the original signal, therefore, the additional step lacks patentability.

It is also known that the 4:2:2 signal includes more information in the signal and thus is preferred for a display format, and that the 4:2:0 signal includes less information and thus less bandwidth is required to transmit/process the signal.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Mendenhall which discloses the conversion of a 4:2:0 signal into a 4:2:2 signal, by reconvertng the 4:2:2 signal in to the 4:2:0 signal which produces a signal which occupies less bandwidth.

In considering claims 6 and 26,  
Mendenhall does disclose the system can received signals of MPEG-2 where it is known that MPEG-2 includes both standard definition and high definition video signals (MP@ML and MP@HL) .

In considering claims 16, 25 and 28-29,  
Mendenhall discloses the use of a display device such as a television set or other type of monitor (col 3, line 64-67). However, Mendenhall does not explicitly recite the use of a display which is a liquid crystal on silicon imager. Mendenhall does disclose the system can received signals of MPEG-2 where it is known that MPEG-2 includes both standard definition and high definition video signals (MP@ML and MP@HL) (referring to claim 29 HDTV receiver).

Although, the use of LCD's or plasma displays are conventional in the art, the examiner takes "OFFICIAL NOTICE" to the use of a liquid crystal on silicon imager to display video signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Mendenhall which discloses a system which can

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receive/process and display a variety of input signals, to utilize a conventional display such as an LCD or plasma device, in order to provide a viewer the ability to view a progressive signal on a non-interlaced display.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure—please refer to newly cited references on attached form PTO-892.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)305-HELP.

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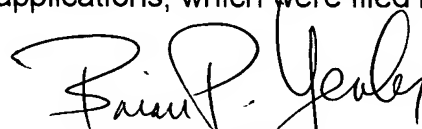
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General information brochures can also be obtained in person from the Patent Search Room located in Crystal Plaza 3, Room 1A03, 2021 South Clark Place, Arlington, VA 22202.

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BRIAN P. YENKE  
Primary Examiner  
Art Unit 2614

  
B.P.Y.

12 May 2004